

Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.

F7692 LO

THE LOG OF THE LAB

Items of Current Research
FOREST PRODUCTS LABORATORY* FOREST SERVICE
U. S. DEPARTMENT OF AGRICULTURE

Madison, Wisconsin



Release August 30, 1930

FROM THE DIRECTOR:

I believe that our readers will share our gratification in knowing that the Government has recently taken action to provide a permanent home for the Forest Products Laboratory, now approaching its twenty-first year. Congressional authorization to that effect became law when signed by President Hoover on April 15, 1930, and authority has been given the Secretary of Agriculture to enter into contracts for the complete building.

Following the President's call last winter for the "energetic yet prudent pursuit of public works," Secretary of Agriculture Hyde, with the Administration's approval, recommended to the Senate and House the inclusion of adequate quarters for the Laboratory in the enlarged Federal building program. This recommendation at once received the support of leaders who have taken a realistic view of the relation existing between forest products research and satisfactory forest utilization. It also was endorsed and supported by forestry and land-owning groups, producers and consumers

of lumber and wood products, and public and regional interests.

Within the next eighteen months much-needed accommodations should be available for Laboratory research projects now temporarily handled in several University of Wisconsin buildings. The plans afford scope also for expansion of work during the next few years as authorized under the McNary-McSweeney Forest Research Act of 1928. At the same time the fostering cooperation of the University of Wisconsin does not terminate, but will be continued by the donation of a site for the building and an increased allotment of light, heat, and power.

It is our hope that, through the greater facilities that will soon be provided, the Laboratory will be able to strengthen and enlarge its service to the forest-using public, and by an increasingly practical application of research to the problems of the wood producing and consuming industries may the more adequately fulfill the purposes for which it is maintained.

CARLILE P. WINSLOW

* Maintained at Madison, Wis., in cooperation with the University of Wisconsin

YELLOW FLASHES FROM A BLACK BOX telegraph to the eye the percentage moisture content of any piece of lumber, when readings are taken with the "blinker" machine, the new electrical moisture meter developed at the Laboratory. Two neon tubes flash through round windows close together. One "blinks" at a standard rate, the other at a rate determined by the moisture content of the wood into which the needle point terminals, set in the face of a special hammer, have been driven. If the wood is wetter than the moisture content indicated by the setting of the instrument, the second tube will flash faster than the standard; if drier, more slowly. If the machine is adjusted exactly to the wood moisture content, the indicator tubes will flash at the same rate. The range of the "blinker" machine is about 8 to 24 per cent moisture content. Models of the instrument can be built either for sorting lumber above or below selected moisture percentages or for closely measuring any moisture content within the machine range. Both types are quick and simple in operation, compact, and relatively inexpensive to construct. Further detailed information will be supplied on request.

Longfellow's Woods Revisited

*This is the forest primeval,
Where a small coleopterous weevil
Effectively dines
On the murmuring pines
And the hemlocks—a terrible evil.*
Harvard Lampoon

THOUSANDS OF MILES OF TIES ARE NOW TREATED

"A saving of \$145,000 a day accrues to the railroads of the country through the present practice of using chemically treated timber for crossties and other purposes. . . . When no untreated ties are left in tracks to affect the requirement figures we shall undoubtedly secure an average life of 20 years . . . The roads' savings will then be . . . \$287,000 for each day of the year," said C. C. Cook, maintenance engineer of the Baltimore & Ohio Railway, in a recent address. *Is research on the preservative treatment of ties and timber worth while?* The Laboratory for twenty years has kept in close contact with railways and treating plants in its timber preservation work. New facts are constantly being added to make chemical impregnations more practical. Treating variables—viscosity of the preservative, temperature, pressure, time, moisture content of the wood, and other related factors—are being separately evaluated in their effects, and the best combinations of factors are being worked out for species after species. Engelmann spruce, about to be rejected by the railroads as tie material because of unsatisfactory treating results, was this year kept on the production chain through successful demonstrations at one of the largest tie treating plants in the country. Hemlock,

southern pine, white spruce, Douglas fir, the true firs—these species and others are now taking their turn in the Laboratory's pressure tanks to prove out the latest scientific methods of getting good penetrations of preservative with minimum reduction in strength of the wood. Preservation is a field in which efficient use of forest resources and every-day commercial practice are coming squarely together on a dollars-and-cents basis.



A HALF-BREED PINE is the Laboratory's latest discovery, the putative offspring of a western yellow and a Jeffrey pine. There seems to be no other way to account for the facts in the case.

The parent species are extremely similar, but heretofore there has been a last, unfailing means of telling them apart—the odor of the wood or leaf, which means a difference in the chemical basis of the extractives. The oleo-resin or "dip" that exudes from a wound in western yellow pine yields terpenes, in other words common turpentine. That from Jeffrey pine is practically in a class by itself, yielding heptane, an aromatic fluid whose odor suggests lemon extract, and which plays an important part in the preparation of anti-knock motor fuel.

Consistently, for these two species, heptane has meant "Jeffrey," terpene has meant "western yellow." *What kind of a tree, then, yields both heptane*

and terpenes? The answer is obvious, and the existence of at least one tree of that kind seems definitely proved by recent tests. A number of samples of Jeffrey and western yellow pine dip were being distilled at the Laboratory for the California Forest Experiment Station. Most of the samples gave off either straight heptane or straight terpenes, in the regular way. But when one particular sample was distilled, first heptane and afterward turpentine dripped from the spout. It was thought that two dips had got mixed, but another sample, collected with special care from the same tree (supposedly a Jeffrey), again produced the two substances in succession as the temperature of the still was raised.

What the forest botanist had suspected was confirmed by the chemist. The tree is a hybrid, a creature of mixed "blood," and as the old saying has it, "blood will tell."



SWEET GUM WANTED

Did you ever pick sweet gum? A bit tedious, but to a youngster's fancy the best of all chewing. As this material, known to pharmacists as storax, has a commercial value for a number of uses, the Laboratory will supply upon request information on tapping the tree (*Liquidambar styraciflua*, red gum or sweet gum) to secure increased production. A manufacturer of tobacco-flavoring condiments informs us that he uses 15,000 pounds of storax annually and prefers the American gum to the imported article.

FREE COPIES of these new publications can be obtained from the Department of Agriculture, Washington, D. C., while the supply lasts:

Leaflet No. 56, *Preventing Cracks in New Wood Floors*. Traces to its source one of the commonest troubles of the home owner.

Technical Bulletin No. 167, *Tests of Large Timber Columns and Presentation of F. P. L. Column Formula*. Of special interest to engineers and architects. The tests cover a wide range of timber quality and slenderness ratio, while the Laboratory's new column formula aids more accurate design of columns of "intermediate" length.

PURCHASE THESE from the Superintendent of Documents, Government Printing Office, Washington, D. C.:

Technical Bulletin No. 158, *Comparative Strength Properties of Woods Grown in the United States*. Price, 10 cents. Strength data reduced to handy index numbers for the 164 American wood species thus far tested; a simplification of Bulletin 556, sometimes referred to as the "lumberman's Bible."

Technical Bulletin No. 171, *Principles of Box and Crate Construction*. Price, 55 cents. Gives formulas, rules, and general instructions for designing all of the common types of boxes and crates, including nailed and lock-corner wooden boxes, cleated plywood boxes, wire-bound boxes, fiber boxes, nailed crates and wire-bound crates.

HOW TALL IS A TREE?

It depends on who saw it, and how far away from home. Stories are current today about trees in the "back reaches of Australia" alleged to exceed 500 feet in height, and reports of trees crowding or exceeding the 400-foot mark crop up regularly in the forestry journals.

To make a really good tree story a true story is often difficult. A member of the Laboratory staff who spent a year in Australia not long ago used the opportunity to check up on some of the basic facts. The tallest Australian tree he actually measured was 310 feet, and he satisfied himself that the tallest tree ever measured with accuracy in that country was a *Eucalyptus regnans* or "mountain ash" that grew at Colac, Victoria, and was 346 feet high. A prize offered at the Melbourne Exposition in 1888 for proof of the tallest tree standing at that time was won on evidence for a eucalypt 325 feet high.

Measurements by a well known forester gave 363 feet for the height of a redwood growing in Bull Creek Flat, California. This is the tallest tree in the world on which there is authentic and reliable information. Even 360 feet is a lot of tree; if you can bat a baseball that far you can hit home runs in a number of major league ball parks.